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# **Entrepreneurial Intentions and Migration Tendencies Amongst University Students in Eastern Germany**

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## **Abstract**

The article explores the relation between migration tendencies of university students and their entrepreneurial intentions. The aim of this analysis is to give an answer to whether students who are willing to start a company tend to migrate from their location of study to the same or even greater extend as opposed to students without any affinity to business creation. Therefore, we investigated the relation between occupational intentions and migration tendencies among 1,243 students from the university locations Jena and Ilmenau. Results indicate a link between migration and entrepreneurship, as plans to start-up a business come along with the wish to stay at the present domicile. We conclude that entrepreneurship education could help to counteract migration and should be particularly adapted to the structure and needs of the regional industry.

## **Keywords**

Regional development, Universities, Business start-ups, Entrepreneurship education, Graduate migration.

# 1. Problem Statement

More than fifteen years after German reunification, Eastern Germany still suffers from several problems as a consequence of restructuring the entire industry. First, the situation of the labor market remains particularly disappointing. The unemployment rate is on average more than twice the West German rate. In some regions, especially the weak North-East, unemployment is well above three times as high. Second, the population in East Germany is steadily decreasing. This is not only because of a decreased birth rate but mainly because of a migration from the East to the West. Especially well educated and high skilled workers are forced to migrate to the western part of Germany because of limited qualitative jobs and the absence of possibilities for professional enhancements (Schneider 2005).

The need for a modernization of existing industry structures and the creation of new innovative company start-ups has been recognized by policymakers. Over the last years, several East German states started programs to promote university based business start-ups. With support of the Federal program EXIST, the curricula at universities were restructured and measures to induce and to support the creation of new firms were established. Based on the experiences the United States, the establishment of new high potential companies and the rapid reduction of the unemployment rate were expected. Universities and research institutes had been identified as sources of knowledge and human resources for the creation of new industries and the restructuring of industry. How universities could contribute to economic development shows the quite impressive example of the Massachusetts Institute of Technology (MIT) in Boston (U.S.). A study of BankBoston from 1997 states that MIT graduates have founded 4,000 companies, creating 1.1 million jobs worldwide and generating annual sales of \$232 billion (BankBoston 1997).

Encouraged by such experiences, in 1999 an initiative was formed by different universities and partners from the industry in the East German state Thuringia. The aims of this initiative were to foster academic entrepreneurship and to raise the number of start-ups from the academic establishments. In doing so, a number of new innovative companies were supported and established. Similar initiatives operated for example also in Saxony, Brandenburg and Mecklenburg-Western Pomerania, and their results are also exhaustively documented (Kulicke 2006).

Despite of the efforts of East German universities in the qualification of students for entrepreneurship and the support of business start-ups, it seems as if the 'MIT mechanism of job creation' has not shown its fruitfulness yet. The problems of high unemployment rates and unattractive job opportunities still exist. Apart from the fact that ten years of work is a very small period, there is evidence that plans of policymakers and initiatives do not work as expected. The original idea was to give students all the qualification and support they need to start and develop a business. Embedded in a regional network, the new companies would grow and create employment. But reality reveals:

- (1) Only a small proportion of students become self-employed right after completing their studies. Most students with an interest in starting a business firstly seek professional experiences in established companies. They set up a business five years after graduation or much later, mostly when they meet the right chance at the right time.
- (2) Many students at East German universities tend to migrate after finishing their studies because of high unemployment and missing employment opportunities. Quite a few alumni strive for a professional career in the Western part of Germany.

Assuming that students with intentions to start a business also tend to migrate, university-based activities to promote start-ups within the local or regional contexts seem to be dubious. Could it be possible that hundreds of potential entrepreneurs are created and educated at East German universities, and that these people move to other regions in order to get in profession and to start a business there? Does it really make sense at East German universities to teach entrepreneurship and then advise students to become employed by all means, however worry about finding the right business idea maybe some time later? Nevertheless, the question could also be formulated in another way: Are measures for establishing a culture of entrepreneurship at universities really suitable to overcome the migration of young professionals from Eastern Germany?

Unfortunately, there is no research yet available to answer the question to which extend students with entrepreneurial intentions and plans also tend to migrate after graduation. For this reason, the aim of the present study is to explore and explain migration tendencies and entrepreneurial intentions of university students and their intentions to start a company. The analysis based on data from a cross-sectional study, so called “Thuringian Student Survey 2007”, aimed at surveying undergraduate students from universities of Thuringia. Data are used from two different university locations: Jena and Ilmenau. Both are centers of an education for engineering sciences and both have experiences in the motivation and qualification of entrepreneurs since 1999.

The present paper tries to make a contribution to this research gap and it stresses the importance of further changes of the academic towards an integrated entrepreneurship education (EE). In doing so, section two of this article contains a review of literature related to the subject. In section three the methodology and research design are presented. Section four contains the descriptive and explorative data analysis to give an answer to what kind of students tend to migrate and what factors are influential in this process. The paper ends with conclusions, implications, and the limitations of our research.

## **2. Literature Review**

A very comprehensive study on entrepreneurial activities and intentions of students was done by Fueglistaller et al. (2006). In an international survey they asked students from 14 countries and found on international average that students intend to enter the job market after graduation as follows: entry into a large company (17.8%), a medium-sized company (16.8%), a small company (11.8%), or as an entrepreneur (12.1%). The authors also state that professional expectations change over time. “For example, more students intend to become an entrepreneur after having gained several years of professional experience, rather than intending to do so directly after graduation” (Fueglistaller et al. 2006:7). The data for Germany indicate that self-employment right after graduation is intended by 8.0% of the students, and by 26.8% after five years of gaining professional experience (Chlosta et al. 2006, p. 9).

Kerst and Minks also discovered that only a small proportion of graduates started to be self-employed right after finishing study. On average, it takes two years until a graduate’s self-employment; however, this is strongly bound to factors like course of study or actual conditions at the labor market (Kerst & Minks 2005, p. 21). Other studies on graduate entrepreneurship for example investigate factors that determine self-employment among graduates, however often without delivering data on how intentions depend on timing (Tackey and Perryman 1999; Greene and Saridakis 2008).

Academic literature on the migration of graduates can be classified as follows: surveys on international migration of university students (cf. for example Aidis et al., 2005), discussions on how universities could attract students from other region to successfully compete (e.g. Baryla & Dotterweich 2001), and reports on the interprovincial migration of university graduates leaving to other places. Only the latter is relevant for this paper.

Kodrzycki (2001) states that little systematic evidence exists on factors influencing location decisions of recent graduates. Her study of college graduates shows that the person's past history of migration is very important. In addition, the majority of moves are made to states with stronger economies or more attractive characteristics, as measured by such factors as higher employment growth, lower unemployment, higher pay, lower housing costs, or better amenities. Gottlieb & Joseph (2006) studied college-to-work migration decisions of technology graduates and holders of doctorates within the United States. They found that "science and technology graduates migrate to better educated places, other things equal; that PhD graduates pay greater attention to amenity characteristics than other degree holders; and that foreign students from some immigrant groups migrate to places where those groups are concentrated" (Gottlieb & Joseph 2006, p. 126).

A case study, led by the University of Edinburgh (Bond 2008), investigated migration among graduates from Scottish higher education institutions following the aim to improve understandings of why some graduates leave Scotland to live and work elsewhere after completing their studies, while others stay in Scotland. The survey indicated that five years after graduation the majority (70%) of graduates who had originated from Scotland were living there compared to only 21% of those who had not originated from Scotland. With respect to the motivations that underlie graduate migration, three groups of factors are important: the opportunities that are perceived to exist in various geographical places; the connections people have to such places; and the expectations they have for their future lives. The most significant opportunity relates to employment (Bond 2008).

Busch (2007) analyzed the out-migration of graduates to other German states or abroad based on the German Socio-Economic Panel (GSOEP). He showed that ten years after graduation, slightly more than seventy percent of the graduates still live in the state where they completed their studies. His analysis also confirms that non-resident students exhibit a significant higher migration propensity than resident fellows. Unfortunately he gives no separated data for Eastern Germany. Overall, literature on the correlation of migration and self-employment intentions is rare. However, Dahl & Sorensen (2007) state that entrepreneurs tend to open businesses in regions in which they have deep roots. They found that those ventures perform better and survive longer when they are located in these home regions.

### **3. Methodology**

#### **3.1 Object of Investigation**

The regional focus of the present paper is on the East German state Thuringia. It has an area of 16,171 square kilometers and 2.29 million inhabitants, making it the sixth smallest by area and the fifth smallest by population of Germany's sixteen Federal States. The industrialization of Germany in the 19th century began in Saxony and Thuringia; important branches were mining (potash), porcelain, glass, toys, and above all machine tools and the optical industry associated with the names Zeiss and Schott in Jena.

With the Reunification of Germany in 1990, the region has been affected by radical structural changes. Traditional industries and large companies collapsed. The existing economic links disintegrated and many jobs have been lost. But during the past fifteen years, the industrial basis of Thuringia has almost completely been revamped. Today, business life in Thuringia is marked essentially by small and medium-sized companies. Science, economy, and politics in Thuringia have established a dense network enabling research institutes, universities, and companies to work together intensively as partners.

In this context, Jena and Ilmenau have developed to important technology regions. At the same time, both are centers for education of several engineering disciplines. However, they are also two very divergent locations. On the one hand, Ilmenau is a city of about 26,000 inhabitants with 7,200 students studying at Ilmenau University of Technology. The economy of Ilmenau in former times was characterized by production of glassware and porcelain. After 1990, Ilmenau University of Technology served as promoter of business development. More than 100 high-tech companies, a lot of them in the computer software sector, were founded; most of them are start-ups from the university.

On the other hand, Jena has the profile of a high-tech region especially in biotechnology, microelectronics, optics, and lasers. With a population of 103,000 it is the second largest city in Thuringia. The metropolitan area of Jena is among Germany's 50 fastest growing regions, with many internationally renowned research institutes and companies, a comparatively low unemployment. More than 25,000 students are enrolled in the Friedrich Schiller University or in the University of Applied Sciences.

### **3.2 Data and Sample**

From April to June 2007, we performed a cross-sectional study, so called "Thuringian Student Survey 2007", aimed at surveying undergraduate students from universities of Thuringia. The research was based on a prospective basis, i.e. we asked students before their decisions will come into action. In general, our aim was to obtain information on the student's professional intentions and entrepreneurial potential, and to evaluate different types of lectures in entrepreneurship. In detail, we surveyed:

- The aspired professional position right after graduation as well as five years after completing their studies;
- The motivation for professional career's choice;
- The prospective work place and reasons therefore;
- The entrepreneurial interests, intentions, willingness, and experiences; and
- Whether the students have already participated or wish to participate in entrepreneurial-specific lectures and how they evaluate their importance.

The original sample consisted of 1,587 randomly selected students from eight universities. The following analysis only includes data from University of Applied Sciences Jena and Ilmenau University of Technology. The total number of valid answers in our sample is 1,243. The sample is representative for each university with respect to courses of study. The observations comprise three fields of degree programs: engineering, business administration, and social sciences. Most students surveyed at University of Applied Sciences Jena had already completed their first year of study while the majority of students from Ilmenau University of Technology were at the beginning of their studies. The composition of the sample is illustrated in Figure 1.

*Fig. 1: Sample Composition*

|                                     | Ilmenau University of<br>Technology | University of Applied<br>Sciences Jena |
|-------------------------------------|-------------------------------------|----------------------------------------|
| <b>Courses of study:</b>            |                                     |                                        |
| Students of Engineering             | 54.4%                               | 51.8%                                  |
| Students of Business Administration | 39.0%                               | 37.6%                                  |
| Students of Social Sciences         | 6.6%                                | 10.6%                                  |
| <b>Previous duration of study:</b>  |                                     |                                        |
| 1-3 semester                        | 65.4%                               | 20.5%                                  |
| 4-6 semester                        | 35.2%                               | 49.7%                                  |
| more than 6 semester                | 8.4%                                | 29.8%                                  |
| <b>Gender:</b>                      |                                     |                                        |
| Male                                | 68.4%                               | 60.7%                                  |
| Female                              | 31.6%                               | 39.3%                                  |
| <b>Age:</b>                         |                                     |                                        |
|                                     | mean=21.2                           | mean=23.9                              |
|                                     | sd=1.97                             | sd=2.89                                |
|                                     | min=18, max=35                      | min= 18, max=39                        |

### 3.3 Measurement

For the explorative data analysis, the relation between occupational intentions and migration tendencies are investigated, as well as further factors that might influence migration intentions. To test the correlation we used binary-coded variables with the value 0 for “no/not true/not applicable” and the value 1 for “yes/true/applicable”. The variables regarding entrepreneurial intentions are:

- Intended professional position (self-employed, employed in a SME, employed in a large company), and
- Intention to start a business (potential founder; starting a business within the next two years; starting a business in more than two years).

In order to identify influential factors on migration tendencies, we decided to compute correlations for the three different scenarios:

- (I) The intention to stay at the present domicile,
- (II) The intention to stay in the region of Thuringia, but not at the present domicile, and
- (III) The intention to migrate to West Germany.

Within the first category, correlation is tested with intentions to stay or to leave the present university location. The second category explores correlation of factors with the tendency to move to another location within Thuringia respectively not to move. The focus of category three lies on the intention to migrate to a state of Western Germany versus not having this intention.

In our analysis, the control variables we used are gender (male), field of study (students of engineering, students of business), age (25 years and older) and the previous duration of study (being at the end of study). Correlation was measured with Spearman's rank correlation coefficient.

## 4. Findings

### 4.1 Descriptive Data Analysis

Ilmenau University of Technology and University of Applied Sciences Jena were separately analyzed for two reasons. First, to avoid bias since answers from Ilmenau University of Technology are overrepresented in our sample. Second, a separated analysis allows us to identify differences and similarities between both locations. This is important as we believe that “local factors” might explain to a large extent the motivations for moving out of the region.

Figure 2 offers information on the origin of students and their prospective work place. Accordingly, the largest share of the students comes from the respective region. The relative number of students originating from the local area is for Jena nearly three times as high as for Ilmenau. In addition, 22.0% of Ilmenau University of Technology students are stemming from West Germany, whereas this occurs for only 8.9% of students at University of Applied Sciences Jena.

36.6% of students surveyed from University of Applied Sciences Jena intend to stay at the present domicile, 13.2% plan to move to another location within Thuringia, 23.9% aim to migrate to Western Germany, and another 22.9% want to go abroad. The situation at Ilmenau University of Technology differs considerably. Here, the majority of 44.0% intends to migrate to West Germany, and only 10.8% want to stay at the present domicile. However, for both locations there are more students willing to migrate to Western Germany and abroad compared with the respective shares stemming from these areas. Thus, the net loss to Western Germany and abroad underpins that migration at both Ilmenau University of Technology and University of Applied Sciences Jena is a true phenomenon.

*Fig. 2: Origin of Students and Intentions to Leave University Location after Finishing Study*

| Ilmenau University of Technology |        |                   | University of Applied Sciences Jena |                   |
|----------------------------------|--------|-------------------|-------------------------------------|-------------------|
|                                  | Origin | Prospective Place | Origin                              | Prospective Place |
| Local area                       | 7.6%   | 10.8%             | 19.7                                | 36.6              |
| Regional area                    | 50.1%  | 15.6%             | 65.7                                | 13.2              |
| West Germany                     | 22.0%  | 44.0%             | 8.9                                 | 23.9              |
| Abroad                           | 10.1%  | 27.0%             | 3.9%                                | 22.9              |

In Figure 3 we present the occupational intentions of the students in our sample. This figure illustrates the aspired employment position right after graduation as well as five years after finishing the studies. There are some interesting aspects. The proportion of students who want to be self-employed is very small at both universities (6.4% and 5.9% resp.). However, the relative number is much higher for the period five years after graduation (10.7% and 12.2% resp.). Most students strive for an employment in a small or medium-sized company (SME) right after their studies. This proportion is nearly the same for both universities and declines with the time elapsed.



*Fig. 3: Occupational Intentions of Students*

|                             | Ilmenau University of Technology |                        | University of Applied Sciences Jena |                        |
|-----------------------------|----------------------------------|------------------------|-------------------------------------|------------------------|
|                             | Right after study                | Five years after study | Right after study                   | Five years after study |
| Self-employed               | 6.4%                             | 10.7%                  | 5.9%                                | 12.2%                  |
| Employed in a SME           | 41.3%                            | 37.8%                  | 48.3%                               | 44.9%                  |
| Employed in a large company | 35.9%                            | 38.3%                  | 21.5%                               | 24.9%                  |

It is remarkable that relatively more students from Ilmenau University of Technology strive for an employment in a large company than students from University of Applied Sciences Jena (35.9% versus 21.5% resp.). Furthermore, relatively more students want to work for a large company five years after finishing their studies rather than right after graduation (38.3% versus 24.9% resp.).

Finally, Figure 4 shows the relative number of students who are interested in starting up a business. They are classified as potential founders (persons who could imagine starting a business one day), individuals who already have concrete intentions but do not want to be self-employed in the near future and people who consider starting a business within the next two years.

*Fig. 4: Intentions to Start a Company (in relative numbers)*

|                                            | Ilmenau University of Technology | University of Applied Sciences Jena |
|--------------------------------------------|----------------------------------|-------------------------------------|
| Potential founder                          | 40.4%                            | 47.3%                               |
| Starting a business in more than two years | 12.7%                            | 13.7%                               |
| Starting a business within next two years  | 9.6%                             | 11.7%                               |

The relatively numbers do not differ significantly between both universities. That is, nearly half of the students could imagine to start a business one day, a quarter states to already have plans or an idea to do so, and approximately a tenth intends to be self-employed within their first two years after graduating.

## 4.2 Explorative Data Analysis

The aim of the following analysis is to give an answer to whether students who are willing to start a business also tend to migrate to the same or even greater extend as opposed to students with no affinity to self-employment. Therefore, the relation between occupational intentions and migration tendencies are investigated, as well as further factors that might bias the wish to migrate.

Figures 5 to 7 show the respective correlation coefficients (Spearman's rho). Negative values mean negative correlation, whereas positive values represent a positive correlation. The level gives the strength of the correlation. Statistically robust correlations are marked with an asterisk for significance at the 5% and with two asterisks for significance at the 1% level. In analogy to former section, correlation coefficients are shown for Ilmenau University of Technology and University of Applied Sciences Jena separately.

First, migration tendencies have been tested with occupational intentions right after graduation as well as five years after finishing the study. The respective correlation coefficients are shown by Figure 5. There are worthwhile differences between the university locations Jena and Ilmenau. For University of Applied Sciences Jena, there is a statistically significant positive correlation between the intention to stay in Jena and the willingness to be employed in a SME right after study. The same is true for the willingness to be self-employed. For Ilmenau University of Technology, several correlations can be observed: Students with the intention to be self-employed right after their studies do not want to migrate to West Germany. Those students who want to be employed in a large company do not intend to stay in Ilmenau; they rather desire to migrate to Western Germany. Furthermore, there is a correlation between the wish of being employed in a SME and the intention to move within Thuringia after graduation.

*Fig. 5: Migration Tendencies and Occupational Intentions*

| Spearman's rho                | Ilmenau University of Technology |          |           | University of Applied Sciences Jena |          |          |
|-------------------------------|----------------------------------|----------|-----------|-------------------------------------|----------|----------|
|                               | (I)                              | (II)     | (III)     | (I)                                 | (II)     | (III)    |
| <b>Right after study</b>      |                                  |          |           |                                     |          |          |
| Self-employed                 | 0.0494                           | 0.0185   | -0.0879** | 0.1557*                             | 0.0872   | -0.0910  |
| Employed in a SME             | 0.0360                           | 0.1296** | 0.0163    | 0.2185**                            | 0.0855   | 0.0764   |
| Employed in a large company   | -0.0728*                         | -0.0067  | 0.1933**  | -0.0271                             | 0.1126   | 0.2642** |
| <b>Five years after study</b> |                                  |          |           |                                     |          |          |
| Self-employed                 | 0.0103                           | -0.0028  | -0.0243   | 0.0264                              | 0.0312   | -0.1040  |
| Employed in a SME             | 0.0365                           | 0.0428   | 0.0217    | 0.0680                              | 0.1996** | 0.0462   |
| Employed in a large company   | -0.0756*                         | -0.0162  | 0.1286**  | -0.0154                             | 0.1429*  | 0.2595** |

\* p< 0.05; \*\* p<0.01

With regard to the correlation between migration tendencies and occupational intentions five years after graduation, there are also statistically robust relations: students who want to be employed in a large company five years after finishing their studies intend tendentially more to leave both university locations and prefer to go to a state of West Germany right after graduation. In addition, Ilmenau students who wish to stay at their present domicile consider employment at a large company the least attractive career path.

The central research question was if students who are willing to start a company right after their studies are more likely to stay at their present domicile. In order to explicitly test this assumption, correlation coefficients between intentions of starting a business and migration tendencies are computed and displayed in Figure 6.

The analysis shows a heterogenic picture. It is true for Jena that those students who want to start a business soon also intend to stay at their present domicile. Data for Ilmenau University of Technology show a significant negative correlation between nearby start-up intentions and migration tendencies to West Germany. This means that Ilmenau students who want to start a business within the next two years drift out from Thuringia to a lesser extent as students without such start-up intentions.

*Fig. 6: Migration Tendencies and Intentions of Starting a Business*

| Spearman's rho                             | Ilmenau University of Technology |          |           | University of Applied Sciences Jena |          |         |
|--------------------------------------------|----------------------------------|----------|-----------|-------------------------------------|----------|---------|
|                                            | (I)                              | (II)     | (III)     | (I)                                 | (II)     | (III)   |
| Potential founder                          | 0.0113                           | -0.0616* | 0.0021    | 0.0104                              | -0.1669* | -0.0272 |
| Starting a business in more than two years | 0.0071                           | -0.0287  | 0.0459    | -0.1252                             | -0.0709  | 0.0768  |
| Starting a business within next two years  | 0.0338                           | -0.0055  | -0.1054** | 0.1959**                            | -0.0521  | 0.0974  |

\* p< 0.05; \*\* p<0.01

Taken all the previous insights together, the results seem to be clear: On the one hand, the preference for a direct or later employment in a large company goes hand in hand with the wish to migrate to Western Germany. On the other hand, students who strive for self-employment prefer to remain at their university location.

Figure 7 contains the correlation coefficients for factors that could impact migration decisions. We analyzed the influence of gender, course of study, age, and the previous period of study. The findings point out that these factors truly have a strong statistically significant impact on migration intentions of students at Ilmenau University of Technology. For example, male students are more likely to stay in Ilmenau or to move within Thuringia than females.

*Fig. 7: Further Influential Factors on Migration Intentions*

| Spearman's rho          | Ilmenau University of Technology |           |           | University of Applied Sciences Jena |         |         |
|-------------------------|----------------------------------|-----------|-----------|-------------------------------------|---------|---------|
|                         | (I)                              | (II)      | (III)     | (I)                                 | (II)    | (III)   |
| Male                    | 0.0867**                         | 0.1087**  | -0.0621*  | 0.0488                              | 0.0274  | 0.0429  |
| Students of engineering | 0.1557**                         | 0.1289**  | -0.1821** | 0.0341                              | -0.0125 | -0.0316 |
| Students of business    | -0.1280**                        | -0.1270** | 0.1769**  | -0.0015                             | -0.0076 | 0.0789  |
| 25 years and older      | 0.0921**                         | 0.0135    | -0.0454   | 0.1367                              | -0.0286 | -0.0633 |
| End of study            | 0.0517                           | -0.0151   | -0.0161   | 0.0594                              | -0.0011 | 0.0355  |

\* p< 0.05; \*\* p<0.01

The most interesting insight, however, seems to be that differences exist when putting migration intentions between students of different courses of study into the spotlight. Students of engineering are more likely to stay in Ilmenau or within Thuringia, and they are less interested in moving to West Germany. In contrast to that, students of business administration do not want to stay in Ilmenau; this group is especially interested in migrating out of Thuringia. Furthermore, there is a strong correlation between age and the intention to stay in Ilmenau. However, it could not be identified a correlation between the length of previous study period and migration intentions.

Regarding influential factors for migration, the analysis did not show a consistent picture for both university locations. As students from Ilmenau University of Technology have a stronger incentive to leave their place of study after graduation, this analysis identified some factors that correlate with the tendency to leave. However, most of these factors apparently had no effect on students from University of Applied Sciences Jena. This leads to the conclusion that more than other variables it is the environment that determines the effect that other potential influence factors might have.

## 5. Contributions and Implications

The present paper has pursued, above all, the question whether students who are willing to start-up a business also tend to migrate to the same or greater extent as to students with no affinity to self-employment. As long as many students migrate, and maybe also those with intentions to start a business one day, new companies will probably not set up in the region where they were academically and entrepreneurially educated. The key results of our study are:

- For both university locations, there are more students willing to migrate to Western Germany and abroad compared with the respective shares stemming from these areas, indicating a net loss.
- There is a trend that students who want to be self-employed prefer to stay at their present place of study.
- A number of students strive for a direct or later employment in a large company, and this cohort shows also most migration tendencies.
- Location, gender, and course of study matter and determine migration. However, the factor that most affect migration tendency is university location.
- Most of the students who want to be their own boss intend to accumulate professional experiences before being self-employed, as the relative number of those who wish to be self-employed right after graduation is half of the number of those who want to be self-employed five years later.

These findings have important implications for policy-makers and academics. In particular, the fact that migration and entrepreneurship are linked phenomena does not only have consequences on how to design university and entrepreneurship education. It also impacts the process how to evaluate regional programs that promote entrepreneurship.

It appears that the promotion of an entrepreneurial mindset amongst university students is helpful to counteract migration; supposing that students who have been sensitized and qualified intend to start a business promptly. In this context, it is important that there exist networks that integrate potential founders and link them to localities. However, as only a small proportion of students strive for starting a business, it is much more important to focus on other influential factors when trying to solve the migration problem. Also the wish of working in a small company could restrain graduates to leave their place of study, as we learn from our observations.

The data analysis supports the view that both occupational intentions as well as local prospects to meet these intentions play an important role for the migration decision. When students seek for employment at large companies but local and regional industry is rather small or medium sized, students are forced to leave. There still remains the question why students intend to work for large companies? Why they have not experienced in their study that it might be also worthwhile to work for a small firm?

In our view, the results give rise to the assumption that the higher educational system in Thuringia has complicity for the fact that many students want to migrate. Small and medium sized companies are typical for Thuringia's industry structure. In contrast, university education often aims at developing elite groups, people who one day will manage large multinational companies and who read job offers not in local newspapers but in national magazines. This might be especially true for students of business administration. The educational system is still oriented towards an employment in established and well known

companies. As a consequence, students migrate to those regions where their needs will be met best.

In this vein, we would like to highlight the importance of an adequate university education. Curricula must be oriented to the needs of the regional industry. There should be a strong focus on linking small business education and entrepreneurship education. Students should not only be prepared for self-employment; in fact, they should experience how to recognize and to develop business ideas. In this sense, it could be a promising way to provide students with business ideas from research and education, to give them support in implementing these ideas, to link them to local networks and to arrange internships in local business start-ups. Supposing that there is a suitable environment for start-ups, this could be an option to repel migration.

Lastly, success or failure of initiatives for promoting of entrepreneurship among university students should not be measured only within the local context. Migration tendencies should explicitly be considered. As an outcome of our analysis, entrepreneurial activities are often realized in other regions, far-away from the place where the program was offered. A local perspective in the evaluation of entrepreneurship programs can distract from the real benefits of such initiatives.

The present study has several limitations. The first concerns the fact that only data from two universities have been analyzed. For this reason, the findings should be cautiously generalized. We suggest that further empirical evidence in this field should also gather data not only from East German universities but also from Western states as to compare findings. The second limitation can be found in the prospective basis of the study. We do not know whether the intentions that have been expressed in the questionnaire will be realized by the students later on. This paper has not surveyed whether students are willing to return to their place of study after some years of staying in another location. For this purpose, it would be necessary to ask graduates what profession they pursue and where they reside. But this implies a longitudinal study, based on a well maintained alumni database. Nevertheless, we hope the insights of our study will inspire other scholars, and the combination of this and future work will surely allow valuable comparisons and insights.

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